

WHAT IS CLAIMED IS:

1 1. A thin film transistor, comprising a source electrode, a drain electrode, a gate electrode,
2 and a semiconductor layer, wherein one of the source electrode, the drain electrode, and the gate
3 electrode comprises an aluminum-based metal layer, a titanium layer, and a diffusion prevention
4 layer interposed between the titanium and the aluminum-based layers.

1 2. The thin film transistor of claim 1, wherein the diffusion prevention layer and the titanium
2 layer are orderly formed on opposite surfaces of the aluminum-based metal layer.

1 3. The thin film transistor of claim 1, wherein the diffusion prevention layer is a titanium
2 nitride layer.

1 4. The thin film transistor of claim 3, wherein the titanium nitride layer contains 5 to 85 wt%
2 of nitrogen.

1 5. The thin film transistor of claim 3, wherein the titanium nitride layer has a thickness of

about 100 to 600Å.

6. The thin film transistor of claim 5, wherein the titanium nitride layer has a thickness of

about 100 to 400Å.

7. The thin film transistor of claim 6, wherein the titanium nitride layer has a thickness of

200 to 400Å.

8. The thin film transistor of claim 7, wherein the titanium nitride layer has a thickness of

about 300Å.

9. The thin film transistor of claim 1, wherein the aluminum-based metal layer is made of
an aluminum alloy containing about 0.5 to 5 wt% of one element being selected from the group
consisting of silicon, copper, neodymium, platinum, and nickel.

10. The thin film transistor of claim 9, wherein the aluminum-based metal layer is made of

an aluminum-silicon alloy containing about 2 wt% of silicon.

11. A flat panel display, comprising a plurality of sub-pixels driven by thin film transistors, each of the thin film transistors comprising a source electrode, a drain electrode, a gate electrode, and a semiconductor layer, wherein at least one of the source electrode, the drain electrode, and the gate electrode comprises an aluminum-based metal layer, a titanium layer, and a diffusion prevention layer interposed between the aluminum-based metal layer and the titanium layer.

12. The flat panel display of claim 11, wherein the diffusion prevention layer and the titanium layer are orderly formed on opposite sides of the aluminum-based metal layer.

13. The flat panel display of claim 11, wherein the diffusion prevention layer is a titanium nitride layer.

14. The flat panel display of claim 13, wherein the titanium nitride layer contains 5 to 85 wt% of nitrogen.

1 15. The flat panel display of claim 13, wherein the titanium nitride layer has a thickness of
2 about 100 to 600Å.

1 16. The flat panel display of claim 15, wherein the titanium nitride layer has a thickness of
2 about 100 to 400Å.

1 17. The flat panel display of claim 16, wherein the titanium nitride layer has a thickness of
2 200 to 400Å.

1 18. The flat panel display of claim 17, wherein the titanium nitride layer has a thickness of
2 about 300Å.

1 19. The flat panel display of claim 11, wherein the aluminum-based metal layer is made of
2 an aluminum alloy containing about 0.5 to 5 wt% of one element being selected from the group
3 consisting of silicon, copper, neodymium, platinum, and nickel.

1 20. The flat panel display of claim 19, wherein the aluminum-based metal layer is made of
2 an aluminum-silicon alloy containing about 2 wt% of silicon.

1 21. A flat panel display, comprising:
2 driving circuits disposed along edges of said display;
3 a plurality of sub-pixels driven by thin film transistors; and
4 conductive lines connecting the driving circuits disposed along edges of said display to each
5 of said plurality of sub-pixels, wherein said conductive lines comprise an aluminum-based metal
6 layer, a titanium layer, and a diffusion prevention layer interposed between the aluminum-based
7 metal layer and the titanium layer.

1 22. The flat panel display of claim 21, wherein the diffusion prevention layer and the
2 titanium layer are orderly formed on opposite sides of the aluminum-based metal layer.

1 23. The flat panel display of claim 21, wherein the diffusion prevention layer is a titanium

nitride layer.

24. The display of claim 23, said titanium nitride layer is 300 Å thick.

25. The display of claim 24, said conductive lines being subjected to a heat treatment of

380°C.